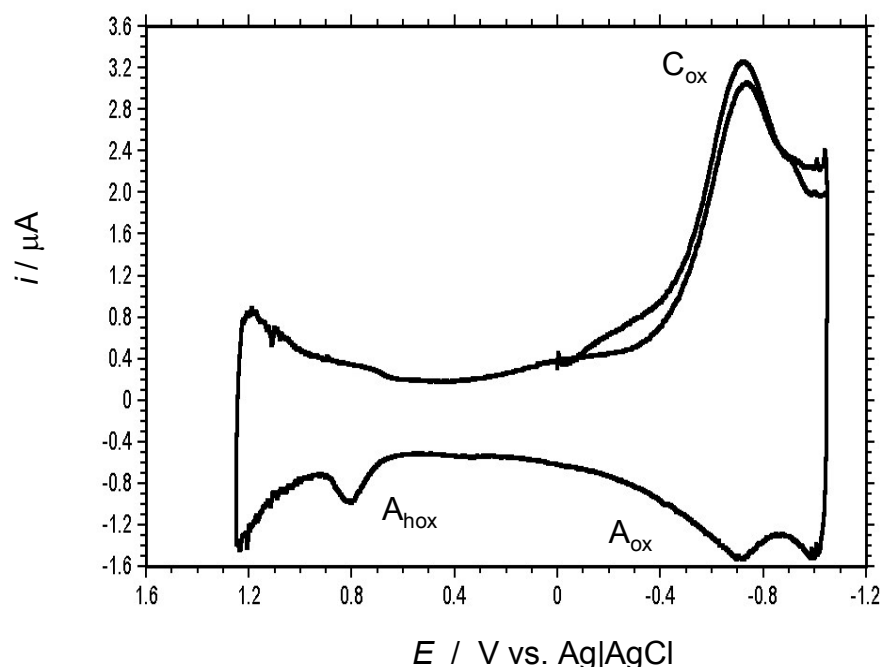
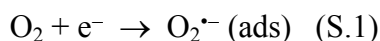


Supplementary information

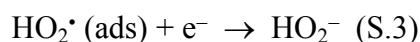
Figure S.1. Cyclic voltammogram at glassy carbon electrode of an air-saturated 0.10 M potassium phosphate buffer aqueous solution at pH 7.0. Potential scan rate 500 mV s⁻¹. Semi-derivative convolution of data was performed to increase peak resolution.



This voltammetric pattern can be described, following literature,⁹⁰⁻⁹³ in terms of the initial one-electron reduction of dissolved oxygen (C_{ox}) to the radical anion superoxide $O_2^{\bullet-}$:



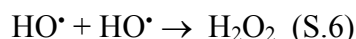
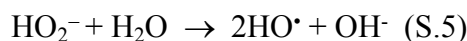
The superoxide ion can follow two alternative pathways: i) protonation (S.2) followed by electrochemical reduction (S.3):



or ii) disproportionation:



In both cases yielding H_2O_2 : as a final product (subsequently reduced to water):



The process A_{ox} can be ascribed to the re-oxidation of the superoxide radical anion generated in the process S.1, whereas the anodic signal at ca. +0.80 V (A_{hox}) can be assigned to the oxidation of HO_2^{\bullet} , respectively.⁹⁰⁻⁹³

Figure S.2. Detail of square wave voltammograms of an air-saturated 0.10 M potassium phosphate buffer aqueous solution at pH 7.0 at: a) unmodified and b) chartreusin-modified (thin film) glassy carbon electrode. Potential scan initiated at -1.05 V in the positive direction; potential step increment 4 mV; square wave amplitude 25 mV; frequency 500 Hz.

